

SEQUENCE LISTING

<110> Tang, Lan
Wu, Wenping
Duan, Junxin
Johannesen, Pia Francke

<120> Thermostable alpha-amylases

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<160> 6

<170> PatentIn version 3.3

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 Ala Ala Thr Ser Leu Ala Ser Pro Leu Pro Gln Gln Gln Arg Tyr Gly
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 aaa aga gca act tcg gat gac tgg aaa agc aag gcc att tat cag ctg 145
 Lys Arg Ala Thr Ser Asp Asp Trp Lys Ser Lys Ala Ile Tyr Gln Leu
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 ctt aca gat cga ttt ggc cgc gcc gat gac tca aca agc aac tgc tct 193
 Leu Thr Asp Arg Phe Gly Arg Ala Asp Asp Ser Thr Ser Asn Cys Ser
 30 35 40

 aat tta tcc aac tac tgt ggt acc tac gaa ggc att acg aag cat 241
 Asn Leu Ser Asn Tyr Cys Gly Gly Thr Tyr Glu Gly Ile Thr Lys His
 45 50 55

 ctt gac tac att tcc ggt atg ggc ttt gat gct atc tgg ata tcg cca 289
 Leu Asp Tyr Ile Ser Gly Met Gly Phe Asp Ala Ile Trp Ile Ser Pro
 60 65 70

 att ccc aag aac tcg gat gga ggc tac cac ggc tac tgg gct aca gat 337
 Ile Pro Lys Asn Ser Asp Gly Gly Tyr His Gly Tyr Trp Ala Thr Asp
 75 80 85 90

 ttc tac caa cta aac agc aac ttt ggt gat gaa tcc cag ctc aaa gcg 385
 Phe Tyr Gln Leu Asn Ser Asn Phe Gly Asp Glu Ser Gln Leu Lys Ala
 95 100 105

 ctc atc cag gct gcc cat gaa cgt gac atg tat gtt atg ctt gat gtc 433
 Leu Ile Gln Ala Ala His Glu Arg Asp Met Tyr Val Met Leu Asp Val
 110 115 120

 gta gcc aat cat gca ggt ccc acc agc aat ggc tac tcg ggt tac aca 481
 Val Ala Asn His Ala Gly Pro Thr Ser Asn Gly Tyr Ser Gly Tyr Thr
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 ttc ggc gat gca agt tta tat cat cct aaa tgc acc ata gat tac aat 529
 Phe Gly Asp Ala Ser Leu Tyr His Pro Lys Cys Thr Ile Asp Tyr Asn
 140 145 150

 gat cag acg tct att gag caa tgc tgg gtt gct gac gag ttg cct gat 577
 Asp Gln Thr Ser Ile Glu Gln Cys Trp Val Ala Asp Glu Leu Pro Asp
 155 160 165 170

 att gac act gaa aat tct gac aac gtg gcc att ctc aac gac atc gtc 625
 Ile Asp Thr Glu Asn Ser Asp Asn Val Ala Ile Leu Asn Asp Ile Val
 175 180 185

 tcc ggc tgg gtg ggt aac tat agc ttt gac ggc atc cgc att gat act 673
 Ser Gly Trp Val Gly Asn Tyr Ser Phe Asp Gly Ile Arg Ile Asp Thr
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gtc aag cat att cgc aag gac ttt tgg aca ggc tac gca gaa gct gcc		721	
Val Lys His Ile Arg Lys Asp Phe Trp Thr Gly Tyr Ala Glu Ala Ala			
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Gly Val Phe Ala Thr Gly Glu Val Phe Asn Gly Asp Pro Ala Tyr Val			
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gga cct tat caa aag tac ctg cca tct ctc atc aat tac cca atg tat		817	
Gly Pro Tyr Gln Lys Tyr Leu Pro Ser Leu Ile Asn Tyr Pro Met Tyr			
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tac gct ttg aac gac gtc ttt gta tcc aaa agc aaa gga ttc agc cgc		865	
Tyr Ala Leu Asn Asp Val Phe Val Ser Lys Ser Lys Gly Phe Ser Arg			
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Ile Ser Glu Met Leu Gly Ser Asn Arg Asn Ala Phe Glu Asp Thr Ser			
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gta ctt aca acg ttt gta gac aac cat gac aat ccg cgc ttc ttg aac		961	
Val Leu Thr Thr Phe Val Asp Asn His Asp Asn Pro Arg Phe Leu Asn			
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agt caa agc gac aag gct ctc ttc aag aac gct ctc aca tac gta ctg		1009	
Ser Gln Ser Asp Lys Ala Leu Phe Lys Asn Ala Leu Thr Tyr Val Leu			
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Val Arg Met Lys Ser Asn Lys Ala Val Tyr Met Asp Ile Tyr Val Gly			
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380	385	390	
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Asn Tyr Gly Ser Gly Ser Thr Asn Gln Val Ser Phe Ser Val Ser Gly			
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Lys Phe Asp Ser Gly Ala Ser Leu Met Asp Ile Val Ser Asn Ile Thr			
415	420	425	
acc acg gtg tcc tcg gat gga aca gtc act ttc aac ctt aaa gat gga		1393	

Thr Thr Val Ser Ser Asp Gly Thr Val Thr Phe Asn Leu Lys Asp Gly
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Arg Ala Thr Ser Asp Asp Trp Lys Ser Lys Ala Ile Tyr Gln Leu Leu
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Thr Asp Arg Phe Gly Arg Ala Asp Asp Ser Thr Ser Asn Cys Ser Asn
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Leu Ser Asn Tyr Cys Gly Gly Thr Tyr Glu Gly Ile Thr Lys His Leu
 45 50 55

Asp Tyr Ile Ser Gly Met Gly Phe Asp Ala Ile Trp Ile Ser Pro Ile
 60 65 70 75

Pro Lys Asn Ser Asp Gly Gly Tyr His Gly Tyr Trp Ala Thr Asp Phe
 80 85 90

Tyr Gln Leu Asn Ser Asn Phe Gly Asp Glu Ser Gln Leu Lys Ala Leu
 95 100 105

Ile Gln Ala Ala His Glu Arg Asp Met Tyr Val Met Leu Asp Val Val
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Ala Asn His Ala Gly Pro Thr Ser Asn Gly Tyr Ser Gly Tyr Thr Phe
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Gly Asp Ala Ser Leu Tyr His Pro Lys Cys Thr Ile Asp Tyr Asn Asp
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Gln Thr Ser Ile Glu Gln Cys Trp Val Ala Asp Glu Leu Pro Asp Ile
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Asp Thr Glu Asn Ser Asp Asn Val Ala Ile Leu Asn Asp Ile Val Ser
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Gly Trp Val Gly Asn Tyr Ser Phe Asp Gly Ile Arg Ile Asp Thr Val
190 195 200

Lys His Ile Arg Lys Asp Phe Trp Thr Gly Tyr Ala Glu Ala Ala Gly
205 210 215

Val Phe Ala Thr Gly Glu Val Phe Asn Gly Asp Pro Ala Tyr Val Gly
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Pro Tyr Gln Lys Tyr Leu Pro Ser Leu Ile Asn Tyr Pro Met Tyr Tyr
240 245 250

Ala Leu Asn Asp Val Phe Val Ser Lys Ser Lys Gly Phe Ser Arg Ile
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Ser Glu Met Leu Gly Ser Asn Arg Asn Ala Phe Glu Asp Thr Ser Val
270 275 280

Leu Thr Thr Phe Val Asp Asn His Asp Asn Pro Arg Phe Leu Asn Ser
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Gln Ser Asp Lys Ala Leu Phe Lys Asn Ala Leu Thr Tyr Val Leu Leu
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Gly Glu Gly Ile Pro Ile Val Tyr Tyr Gly Ser Glu Gln Gly Phe Ser
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Gly Gly Ala Asp Pro Ala Asn Arg Glu Val Leu Trp Thr Thr Asn Tyr
335 340 345

Asp Thr Ser Ser Asp Leu Tyr Gln Phe Ile Lys Thr Val Asn Ser Val
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Arg Met Lys Ser Asn Lys Ala Val Tyr Met Asp Ile Tyr Val Gly Asp
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Asn Ala Tyr Ala Phe Lys His Gly Asp Ala Leu Val Val Leu Asn Asn
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Tyr Gly Ser Gly Ser Thr Asn Gln Val Ser Phe Ser Val Ser Gly Lys
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Phe Asp Ser Gly Ala Ser Leu Met Asp Ile Val Ser Asn Ile Thr Thr
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